

Claims

1. A protective film (12) of plastic, characterized in that it is produced in single-ply, unbacked form from a hot-melt adhesive (14, 14').
2. The protective film (12) of claim 1, characterized in that it is self-adhesive and in particular transparent.
- 10 3. The protective film (12) of claim 1 or 2, characterized in that the hot-melt adhesive (14, 14') is a thermoplastic hot-melt adhesive based on a substance from the following group of substances: thermoplastic polyurethanes, thermoplastic polyamides, thermoplastic copolyamides, thermoplastic polyesters, thermoplastic copolyesters, thermoplastic polyolefins, especially atactic poly- α -olefins, polypropylene or polyethylene, thermoplastic ethylene/vinyl acetate copolymers or a combination thereof.
- 20 4. The protective film (12) of claim 1 or 2, characterized in that the hot-melt adhesive (14, 14') is a reactive hot-melt adhesive, based in particular on reactive PUR or reactive polyolefin or a combination.
- 25 5. The protective film (12) of any one of claims 1 to 4, characterized in that photoprotection and/or oxidation inhibitors are included.
- 30 6. The protective film (12) of any one of claims 1 to 5, characterized in that it has a thickness in the range from 50 micrometers to 500 micrometers, in particular 200 micrometers to 300 micrometers.
- 35 7. A method of applying a protective film, characterized in that a hot-melt adhesive (14, 14') is heated in a primary melting region (18) to application

temperature, in that it subsequently flows off out of the primary melting region (18), the flow-off and application temperature being regulated such that a film (12) of desired width is formed, and in that a 5 product to be protected with the film (12) is moved transversely to the film (12) in such a way that the film (12) covers the product in desired fashion.

8. The method of claim 7, characterized in that the 10 film width (Z') on emergence from the primary melting region (18) is set so as to correspond approximately to the width (B) of the product to be protected with the film, plus twice the height (H) of the product.

15 9. The method of claim 7 or 8, characterized in that the hot-melt adhesive (14, 14') is heated to an application temperature situated in the range from 80° and 250°C, in particular between 130°C and 210°C, preferably between 160°C and 200°C, the hot-melt 20 adhesive (14, 14') being melted preferably in a preliminary melting region (26) before being heated in the primary melting region (18) to the application temperature.

25 10. The method of any one of claims 7 to 9, characterized in that the protective film (12) is used as a self-adhesive protective film (12) and for this purpose the temperature of the product to which the self-adhesive protective film (12) is intended to 30 adhere and the application temperature of the hot-melt adhesive (14, 14') are harmonized with one another such that the protective film (12) enters into sufficient wetting with the surface of the product, the temperature difference between the product and the 35 application temperature being preferably at least 50°C.

11. The method of any one of claims 7 to 10, characterized in that the surface temperature of the product

to be protected is not more than 80°C and not less than 0°C, in particular between 20°C and 40°C.

12. The method of any one of claims 7 to 11, characterized in that the protective film (12) flows off onto a repellently coated supporting element (50), which is moved transversely to the film (12) in a first direction (52), so that a sheet of film is deposited on the supporting element (50), in that the product to be protected with the protective film (12) is placed on the sheet of film deposited on the supporting element (50) and the supporting element (50) is then moved in an opposite second direction (54) transversely to the film (12), so that the product is enwrapped the protective film (12).

13. The method of any one of claims 7 to 12, characterized in that the protective film (12) is separated off to desired length.

14. The method of any one of claims 7 to 13, characterized in that the product covered with the protective film (12) is treated with hot air so that the film (12) shrink-fits to the outer contours of the product.

15. A device (16, 16') for applying a protective film (12) of hot-melt adhesive (14, 14'), having a primary melting region (18), in which the hot-melt adhesive (14, 14') is heated to its application temperature, and having an application unit (20) via which the liquefied hot-melt adhesive (14) flows off in such a way that it forms a coherent film (12) of predetermined width and predetermined thickness.

16. The device (16, 16') of claim 15, characterized in that the application unit (20) is in the form of a slot die (34) whose slot depth (T) and slot width (Z) are preferably adjustable, and in particular are adjustable

in such a way that the width (Z') of the resulting film (12) corresponds approximately to the width (B) of a product to be protected with the film (12), plus twice the height (H) of the product.

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17. The device (16, 16') of claim 15 or 16, characterized in that it has a preliminary melting region (26) which is upstream of the primary melting region (18) and in which the hot-melt adhesive (14, 14') is 10 melted.

18. The device (16, 16') of any one of claims 15 to 17, characterized in that a supporting element (50) is provided for accommodating a product to be protected 15 with the protective film (12), the supporting element (50) being preferably coated in such a way that the protective film (12) does not stick to it.

19. The use of the protective film (12) of any one of 20 claims 1 to 6 for packaging commodity products and consumer products for their storage and transport.

20. The use of the protective film (12) of any one of 25 claims 1 to 6 for protecting the exterior surfaces of automobiles and/or automobile parts and particularly of painted surfaces of these kinds.

21. The use of the protective film (12) of any one of 30 claims 1 to 6 as a substrate for printing inks, particularly for imprints with information content or advertising content.